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generating the schema for the relational database from the metadata, wherein at least one table is thereby defined in the relational database wherein a metadata table is in at least three tables: a metadata item table, metadata attribute table and a metadata nesting table.

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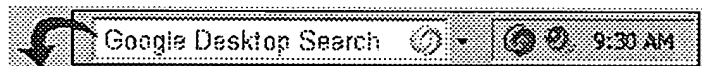
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IEEE JNL IEEE Journal or Magazine

IEEE JNL IEE Journal or Magazine

IEEE CNF IEEE Conference Proceeding

IEEE CNF IEE Conference Proceeding

IEEE STD IEEE Standard

- ☐ **1. Integrating remote invocation and distributed shared state**
Tang, C.; Chen, D.; Sandhya Dwarkadas; Scott, M.L.;
Parallel and Distributed Processing Symposium, 2004. Proceedings. 18th Inter
26-30 April 2004 Page(s):30
Digital Object Identifier 10.1109/IPDPS.2004.1302942
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1 [Relational languages for metadata integration](#)



Catharine M. Wyss, Edward L. Robertson

 June 2005 **ACM Transactions on Database Systems (TODS)**, Volume 30 Issue 2

Publisher: ACM Press

 Full text available: [pdf\(692.43 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

In this article, we develop a relational algebra for metadata integration, *Federated Interoperable Relational Algebra* (FIRA). FIRA has many desirable properties such as compositionality, closure, a deterministic semantics, a modest complexity, support for nested queries, a subalgebra equivalent to canonical Relational Algebra (RA), and robustness under certain classes of schema evolution. Beyond this, FIRA queries are capable of producing fully dynamic output schemas, where the number of ...

Keywords: Data integration, federated data model, federated databases, interoperability, metadata integration, metadata querying, multidatabases, relational query algebra, schema integration, transformational completeness

2 [Sequoia 2000 metadata schema for satellite images](#)



Jean T. Anderson, Michael Stonebraker

 December 1994 **ACM SIGMOD Record**, Volume 23 Issue 4

Publisher: ACM Press

 Full text available: [pdf\(674.07 KB\)](#) Additional Information: [full citation](#), [abstract](#), [citations](#), [index terms](#)


Sequoia 2000 schema development is based on emerging geospatial standards to accelerate development and facilitate data exchange. This paper focuses on the metadata schema for digital satellite images. We examine how satellite metadata are defined, used, and maintained. We discuss the geospatial standards we are using, and describe a SQL prototype that is based on the Spatial Archive and Interchange Format (SAIF) standard and implemented in the Illustra object-relational database.

3 [Query Processing: A relational algebra for data/metadata integration in a federated database system](#)



Catharine Wyss, Dirk Van Gucht

 October 2001 **Proceedings of the tenth international conference on Information and knowledge management**
Publisher: ACM Press

Full text available:  [pdf\(1.44 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The need for *interoperability* among databases has increased dramatically with the proliferation of readily available DBMS and application software. Even within a single organization, data from disparate relational databases must be integrated. A framework for interoperability in a federated system of relational databases should be inherently *relational*, so that it can use existing techniques for query evaluation and optimization where possible and retain the key features of SQL, su ...

Keywords: database integration, database schema integration, federated data-base systems, federated information system (FIS), interoperability, metadata, metaquery, multidatabase, query languages, relation-al algebra, schema transparency

4 [Software tools and programming languages: Designing and creating relational schemas with a CWM-based tool](#)

Kumpon Farpinyo, Twittie Senivongse

September 2003 **Proceedings of the 1st international symposium on Information and communication technologies ISICT '03**

Publisher: Trinity College Dublin

Full text available:  [pdf\(216.73 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)

Common Warehouse Metamodel (CWM) is a standard XML-based metamodel for describing data warehouse models, allowing these models to be exchanged between different environments in a unified and convenient way. As part of warehousing environment, several database management systems begin to support export of database schemas to CWM metadata, but still there is no CWM-based tool that helps with the design of databases and also the creation of database schemas. This paper presents a design and develop ...

Keywords: CWM, ER diagrams, relational databases

5 [Image and video digital libraries: Generating fuzzy semantic metadata describing spatial relations from images using the R-histogram](#)

Yuhang Wang, Fillia Makedon, James Ford, Li Shen, Dina Goldin

June 2004 **Proceedings of the 4th ACM/IEEE-CS joint conference on Digital libraries**

Publisher: ACM Press

Full text available:  [pdf\(193.62 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Automatic generation of semantic metadata describing spatial relations is highly desirable for image digital libraries. Relative spatial relations between objects in an image convey important information about the image. Because the perception of spatial relations is subjective, we propose a novel framework for automatic metadata generation based on fuzzy *k*-NN classification that generates fuzzy semantic metadata describing spatial relations between objects in an image. For each pair of ob ...

Keywords: *k*-nearest neighbor rule, image digital library, metadata, prototype selection, r-histogram, spatial relations

6 [Designing and accessing scientific digital libraries: On querying geospatial and georeferenced metadata resources in G-portal](#)

Zehua Liu, Ee-Peng Lim, Wee-Keong Ng, Dion H. Goh


May 2003 **Proceedings of the 3rd ACM/IEEE-CS joint conference on Digital libraries**

Publisher: IEEE Computer Society

Full text available:  [pdf\(92.05 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

G-Portal is a web portal system providing a range of digital library services to access geospatial and georeferenced resources on the Web. Among them are the storage and query subsystems that provide a central repository of metadata resources organized under different projects. In GPortal, all metadata resources are represented in XML (Extensible Markup Language) and they are compliant to some resource schemas defined by their creators. The resource schemas are extended versions of a basic resou ...

7 Distributed semantic query: Remindin': semantic query routing in peer-to-peer networks based on social metaphors

 Christoph Tempich, Steffen Staab, Adrian Wranik

May 2004 **Proceedings of the 13th international conference on World Wide Web**

Publisher: ACM Press

Full text available:  [pdf\(348.43 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

In peer-to-peer networks, finding the appropriate answer for an information request, such as the answer to a query for RDF(S) data, depends on selecting the right peer in the network. We hereinvestigate how social metaphors can be exploited effectively andefficiently to solve this task. To this end, we define a method for query routing, REMINDIN', that lets (i) peers observewhich queries are successfully answered by other peers,(ii), memorizes this obser ...


Keywords: ontologies, peer selection, peer-to-peer, query routing

8 Industrial sessions: beyond relational tables: Garlic: a new flavor of federated query processing for DB2

 Vanja Josifovski, Peter Schwarz, Laura Haas, Eileen Lin


June 2002 **Proceedings of the 2002 ACM SIGMOD international conference on Management of data**

Publisher: ACM Press

Full text available:  [pdf\(1.05 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

In a large modern enterprise, information is almost inevitably distributed among several database management systems. Despite considerable attention from the research community, relatively few commercial systems have attempted to address this issue. This paper describes new technology that enables clients of IBM's DB2 Universal Database to access the data and specialized computational capabilities of a wide range of non-relational data sources. This technology, based on the Garlic prototype deve ...

9 Extracting semantic metadata and its visualization

 Dongwon Lee, Yousub Hwang

March 2001 **Crossroads**, Volume 7 Issue 3

Publisher: ACM Press

Full text available:  [html\(58.49 KB\)](#) Additional Information: [full citation](#), [citations](#), [index terms](#)

10 Maintenance and workload: Using AutoMed metadata in data warehousing environments

 Hao Fan, Alexandra Poulouvasilis

November 2003 **Proceedings of the 6th ACM international workshop on Data warehousing and OLAP**

Publisher: ACM Press

Full text available:  pdf(271.41 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

What kind of metadata can be used for expressing the multiplicity of data models and the data transformation and integration processes in data warehousing environments? How can this metadata be further used for supporting other data warehouse activities? We examine how these questions are addressed by AutoMed, a system for expressing data transformation and integration processes in heterogeneous database environments.

Keywords: data integration, data warehouse, metadata

11 [Machine learning in automated text categorization](#)



Fabrizio Sebastiani

March 2002 **ACM Computing Surveys (CSUR)**, Volume 34 Issue 1

Publisher: ACM Press

Full text available:  pdf(524.41 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The automated categorization (or classification) of texts into predefined categories has witnessed a booming interest in the last 10 years, due to the increased availability of documents in digital form and the ensuing need to organize them. In the research community the dominant approach to this problem is based on machine learning techniques: a general inductive process automatically builds a classifier by learning, from a set of preclassified documents, the characteristics of the categories. ...

Keywords: Machine learning, text categorization, text classification

12 [Querying web metadata: Native score management and text support in databases](#)



Gültekin Özsoyoglu, Ismail Sengör Altıngövdé, Abdullah Al-Hamdani, Selma Ayşe Özel, Özgür Ulusoy, Zehra Meral özsoyoglu

December 2004 **ACM Transactions on Database Systems (TODS)**, Volume 29 Issue 4

Publisher: ACM Press

Full text available:  pdf(737.76 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

In this article, we discuss the issues involved in adding a native score management system to object-relational databases, to be used in querying Web metadata (that describes the semantic content of Web resources). The Web metadata model is based on topics (representing entities), relationships among topics (called *metalinks*), and importance scores (sideway values) of topics and metalinks. We extend database relations with scoring functions and importance scores. We add to SQL score-manag ...

Keywords: Score management for Web applications

13 [Artificial intelligence #1: SA_MetaMatch: relevant document discovery through document metadata and indexing](#)



Hui S. Yau, J. Scott Hawker

April 2004 **Proceedings of the 42nd annual Southeast regional conference**

Publisher: ACM Press

Full text available:  pdf(429.27 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

SA_MetaMatch, a component of the Standards Advisor (SA), is designed to find relevant documents through matching indices of metadata and document content. The elements in the metadata schema are mainly adopted from the Dublin Core (DC). The implementation of the XML metadata schema and coding follows the DC recommended guidelines. After metadata is generated manually for an unstructured document, or is extracted

automatically from documents of well defined layout, they are stored in metadata fil ...

Keywords: Dublin Core, document matching, index, metadata

14 Contributed articles: Resource description framework: metadata and its applications



K. Selçuk Candan, Huan Liu, Reshma Suvarna

July 2001 **ACM SIGKDD Explorations Newsletter**, Volume 3 Issue 1

Publisher: ACM Press

Full text available: pdf(1.02 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

Universality, the property of the Web that makes it the largest data and information source in the world, is also the property behind the lack of a uniform organization scheme that would allow easy access to data and information. A semantic web, wherein different applications and Web sites can exchange information and hence exploit Web data and information to their full potential, requires the information about Web resources to be represented in a detailed and structured manner. Resource Descrip ...

Keywords: Resource Description Framework (RDF), Web, XML, metadata, semantic web

15 Electronic document technology: Developing an XML framework for metadata system

Ruey-Shun Chen, Shien-Chiang Yu

September 2003 **Proceedings of the 1st international symposium on Information and communication technologies ISICT '03**

Publisher: Trinity College Dublin

Full text available: pdf(383.59 KB) Additional Information: [full citation](#), [abstract](#), [references](#)

Metadata is the media to describe the management and storing of kind of knowledge and well-preserved objects. Thus, with the compatibility of all various metadata, we can integrate related knowledge and with unification and management of information system. This paper introduces a system using the XML framework to be compatible with various metadata schemas, using the DTDs of XML to define the system schema structure, allowing more than one DTDs to exist. Therefore, it meets the demand of proces ...

Keywords: DTD, XML, metadata, schema, system design

16 Extending a relational database with deferred referential integrity checking and intelligent joins



Stephanie Cammarata, Prasadram Ramachandra, Darrell Shane

June 1989 **ACM SIGMOD Record , Proceedings of the 1989 ACM SIGMOD international conference on Management of data SIGMOD '89**, Volume 18 Issue 2

Publisher: ACM Press

Full text available: pdf(1.18 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Interactive use of relational database management systems (DBMS) requires a user to be knowledgeable about the semantics of the application represented in the database. In many cases, however, users are not trained in the application field and are not DBMS experts. Two categories of functionality are problematic for such users: (1) updating a database without violating integrity constraints imposed by the domain and (2) using join operations to retrieve data from more than one relation. We ...

17

Document Databases: Bridging XML-schema and relational databases: a system for generating and manipulating relational databases using valid XML documents



Iraklis Varlamis, Michalis Vazirgiannis

November 2001 **Proceedings of the 2001 ACM Symposium on Document engineering**

Publisher: ACM Press

Full text available: [pdf\(130.57 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Many organizations and enterprises establish distributed working environments, where different users need to exchange information based on a common model. XML is widely used to facilitate this information exchange. The extensibility of XML allows the creation of generic models that integrate data from different sources. For these tasks, several applications are used to import and export information in XML format from the data repositories. In order to support this process for relational reposito ...

Keywords: XML, document storage and retrieval, mapping, metadata, querying, relational databases

18 An analysis of XML database solutions for the management of MPEG-7 media descriptions



Utz Westermann, Wolfgang Klas

December 2003 **ACM Computing Surveys (CSUR)**, Volume 35 Issue 4

Publisher: ACM Press

Full text available: [pdf\(448.76 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#), [review](#)

MPEG-7 constitutes a promising standard for the description of multimedia content. It can be expected that a lot of applications based on MPEG-7 media descriptions will be set up in the near future. Therefore, means for the adequate management of large amounts of MPEG-7-compliant media descriptions are certainly desirable. Essentially, MPEG-7 media descriptions are XML documents following media description schemes defined with a variant of XML Schema. Thus, it is reasonable to investigate curren ...

Keywords: MPEG-7, XML database systems, multimedia databases

19 Technical Papers: CREAM: creating relational metadata with a component-based, ontology-driven annotation framework



Siegfried Handschuh, Steffen Staab, Alexander Maedche

October 2001 **Proceedings of the 1st international conference on Knowledge capture K-CAP '01**

Publisher: ACM Press

Full text available: [pdf\(270.14 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Richly interlinked, machine-understandable data constitutes the basis for the Semantic Web. Annotating web documents is one of the major techniques for creating metadata on the Web. However, annotation tools so far are restricted in their capabilities of providing richly interlinked and truly machine-understandable data. They basically allow the user to annotate with plain text according to a template structure, such as Dublin Core. We here present CREAM (Creating Relational, Annotation-based M ...

Keywords: DAML+OIL, RDF, annotations, markup, metadata, ontology, semantic web


20 The model-assisted global query system for multiple databases in distributed enterprises



Waiman Cheung, Cheng Hsu

October 1996 **ACM Transactions on Information Systems (TOIS)**, Volume 14 Issue 4

Publisher: ACM Press

Full text available:  pdf(697.73 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Today's enterprises typically employ multiple information systems, which are independently developed, locally administered, and different in logical or physical designs. Therefore, a fundamental challenge in enterprise information management is the sharing of information for enterprise users across organizational boundaries; this requires a global query system capable of providing on-line intelligent assistance to users. Conventional technologies, such as schema-based query languages and ha ...

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11th International Workshop on research Issues in Data
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Clock: Synchronizing Internal Relational Storage with External XML Documents

Xin Zhang, Worcester Polytechnic Institute
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<http://doi.ieeecomputersociety.org/10.1109/RIDE.2001.916498>

Abstract

Abstract: In many business settings, a relational database system (RDBMS) will serve as the storage manager for data from XML documents. In such a system, once the XML data is dissembled and loaded into the storage system, XML queries posed against the (virtual) XML documents are processed by translating them into SQL queries against the relational storage. However, for applications which frequently update their XML documents, we cannot afford to reload a complete, possibly large, document for each update, instead we must be able to incrementally propagate document updates to the stored XML data. In this paper, we address the issue of correctly reflecting updates of external XML documents into the loaded XML data in a relational database system. We describe Clock, a framework for synchronizing the relational storage with updated XML documents by exploiting a metadata-driven technology. First, we propose

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a set of (DTD preserving) update primitives for XML documents. Second, based on the mapping between XML and the relational model, we describe the propagation of those update primitives. Validation of the updates ensures they will not violate the constraints specified by the DTD. We have implemented a working prototype of the Clock system using the IBM's XML4J parser, JDBC 2 and Oracle 8i. We report on preliminary experiments conducted using this prototype to analyze our algorithms in a document update setting.

 **Additional Information**

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Citation: Xin Zhang, Elke A. Rundensteiner, Gail Mitchell, Wang-Chien Lee. "Clock: Synchronizing Internal Relational Storage with External XML Documents," *ride*, p. 0111, 11th International Workshop on research Issues in Data Engineering, 2001.

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STIC Search Report

EIC 2100

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TO: Anh Ly
Location: RND-3A39

Art Unit: 2162
Wednesday, January 04, 2006
Case Serial Number: 09/783,657

From: Lance Sealey
Location: EIC 2100
RND-4B11
Phone: 571-272-8666

Lance.Sealey@uspto.gov

Search Notes

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Here are the results of your search request.
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